

ShaoHui et al.

S/N: 10/707,768

IN THE CLAIMS:

1. (Original) A magnetic field generator assembly comprising:
a plurality of magnetic elements configured to collectively generate a magnetic field sufficient for diagnostic data acquisition; and
a non-magnetizable pane; ~~and operationally connected to limit separation of one magnetic element from another magnetic element.~~
an adhesive to secure the non-magnetizable pane to at least a portion of the plurality of magnetic elements.
2. (Original) The magnetic field generator assembly of claim 1 wherein the non-magnetizable pane has a thickness of less than 0.1 mm.
3. (Original) The magnetic field generator assembly of claim 1 wherein the non-magnetizable pane is adhesively secured to the plurality of magnetic elements.
4. (Original) The magnetic field generator assembly of claim 1 wherein the non-magnetizable pane includes nylon.
5. (Original) The magnetic field generator assembly of claim 1 further comprising a permanent material block secured to a collective surface of the plurality of magnetic elements opposite that of the non-magnetizable pane.
6. (Original) The magnetic field generator assembly of claim 1 wherein each of the magnetic elements has a thickness of less than 0.6 mm.
7. (Original) The magnetic field generator assembly of claim 1 wherein the plurality of magnetic elements are adhesively secured together.
8. (Original) The magnetic field generator assembly of claim 1 wherein the plurality of magnetic elements includes at least one of Silicon Iron (SiFe), neodymium iron boron (NdFeB), samarium Cobalt (SmCo), and Aluminum Nickel-Cobalt-Iron Cobalt (AlNiCo).

ShaoHui et al.

S/N: 10/707,768

9. (Withdrawn) A magnetic resonance imaging (MRI) apparatus comprising:
a magnetic assembly having a bore therethrough;
a plurality of gradient coils positioned about the bore of a magnet assembly to impress a polarizing magnetic field;
an RF transceiver system and an RF switch controlled by a pulse module to transmit RF signals to an RF coil assembly to acquire MR data; and
wherein the magnetic assembly includes:
at least one multi-element magnet; and
at least one non-magnetizable sheet connected to the at least one multi-element magnet.
10. (Withdrawn) The apparatus of claim 9 wherein the at least one non-magnetizable sheet is adhesively secured to the at least one multi-element magnet.
11. (Withdrawn) The apparatus of claim 9 further comprising at least one permanent material block and wherein the at least one multi-element magnet is secured to the at least one permanent material block.
12. (Withdrawn) The apparatus of claim 9 wherein the magnetic assembly further includes a pair of multi-element magnets and a pair of non-magnetizable sheets wherein each non-magnetizable sheet is positioned to secure one of the pair of multi-element magnets.
13. (Withdrawn) The apparatus of claim 9 wherein each non-magnetizable sheet has a thickness of approximately 0.1 mm.
14. (Withdrawn) The apparatus of claim 9 wherein each non-magnetizable sheet includes nylon, and the non-magnetizable sheet covers a top surface of a respective multi-element magnet.
15. (Withdrawn) The apparatus of claim 9 wherein the non-magnetizable sheet forms element retention netting to limit deterioration of a respective multi-element magnet.

ShaoHui et al.

S/N: 10/707,768

16. (Withdrawn) A method of manufacturing a magnet elements assembly for an MRI apparatus comprising the steps of:

assembling a plurality of magnetic elements to form a multi-element magnet; and
securing a non-magnetizable element-retention sheet to the multi-element magnet so as to reduce element breakaway.

17. (Withdrawn) The method of claim 16 further comprising the step of bonding the non-magnetizable sheet to the multi-element magnet.

18. (Withdrawn) The method of claim 17 wherein bonding includes gluing.

19. (Withdrawn) The method of claim 16 wherein the step of assembling the plurality of magnetic elements includes bonding the magnetic elements to one another.

20. (Withdrawn) The method of claim 16 further comprising the step of attaching the multi-element magnet to a permanent material block.

21. (Withdrawn) The method of claim 20 further comprising the step of attaching the permanent material block to a yoke secured by a pair of posts.

22. (Withdrawn) The method of claim 21 further comprising the step of arranging the multi-element magnet, the permanent material block, the yoke, and the pair of posts to form at least a portion of a magnetic bore of an MRI apparatus.

23. (New) A magnetic field generator assembly comprising:
a plurality of magnetic elements configured to collectively generate a magnetic field sufficient for diagnostic data acquisition;
a non-magnetizable pane operationally connected to limit separation of one magnetic element from another magnetic element; and
wherein the non-magnetizable pane has a thickness of less than 0.1mm.